

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims

1. (Currently Amended) A DNA vaccine ~~comprising including plasmid containing~~ a first plasmid containing a core gene, an E1 gene and an E2 gene of hepatitis C virus; ~~a second plasmid containing an NS3 gene and an NS4 gene of hepatitis C virus; and~~ a third plasmid containing an NS5 gene of hepatitis C virus, ~~wherein the size of the hepatitis C virus genes contained in the first, second and third plasmids ranges from~~ ~~[[2-6]] 2 to 6 kb of the total antigen gene of hepatitis C virus (HCV).~~
2. (Currently Amended) The DNA vaccine as set forth in claim 1, wherein the ~~DNA vaccine includes the size of the hepatitis C virus genes contained in the first, second and third plasmids~~ ~~ranges from plasmid containing~~ ~~[[2-4]] 2 to 4 kb of the total antigen gene of HCV.~~
3. (Cancelled)
4. (Currently Amended) The DNA vaccine as set forth in claim 3 ~~1~~, wherein the ~~[[1st]] first~~ plasmid contains ~~the~~ core gene in which 35-40 amino acids of ~~N-terminal region~~ are eliminated from the N-terminal region of the core gene.
5. (Currently Amended) The DNA vaccine as set forth in claim ~~4~~ 1, wherein the ~~[[1st]] first~~ plasmid contains ~~the~~ core gene in which 40 amino acids of ~~N-terminal region~~ are eliminated from the N-terminal region of the core gene.
6. (Currently Amended) The DNA vaccine as set forth in claim 3 ~~1~~, wherein the E2 gene of the ~~[[1st]] first~~ plasmid contains ~~a~~ transmembrane domain of an E2 protein.
7. (Currently Amended) The DNA vaccine as set forth in claim 3 ~~1~~, wherein the ~~[[1st]] first~~

plasmid contains a base sequence represented by ~~SEQ-ID: No 50~~ SEQ ID NO: 50.

8. (Currently Amended) The DNA vaccine as set forth in claim 7, wherein the ~~[[1st]]~~ first plasmid is pGX10 gDsΔST (Accession No: KCCM 10415).

9. (Currently Amended) The DNA vaccine as set forth in claim ~~3~~ 1, wherein the ~~[[2nd]]~~ second plasmid contains a base sequence represented by ~~SEQ-ID: No 51~~ SEQ ID NO: 51.

10. (Currently Amended) The DNA vaccine as set forth in claim 9, wherein the ~~[[2nd]]~~ second plasmid is pGX10 NS34 (Accession No: KCCM 10417).

11. (Currently Amended) The DNA vaccine as set forth in claim ~~3~~ 1, wherein the ~~[[3rd]]~~ third plasmid contains a base sequence represented by ~~SEQ-ID: No 52~~ SEQ ID NO: 52.

12. (Currently Amended) The DNA vaccine as set forth in claim 11, wherein the ~~[[3rd]]~~ third plasmid is pGX10 NS5 (Accession No: KCCM 10416).

13. (Currently Amended) The DNA vaccine as set forth in claim ~~3~~ 1, wherein the ~~[[1st]]~~ first plasmid contains a base sequence represented by ~~SEQ-ID: No 50~~ SEQ ID NO: 50, the ~~[[2nd]]~~ second plasmid contains a base sequence represented by ~~SEQ-ID: No 51~~ SEQ ID NO: 51, and the ~~[[3rd]]~~ third plasmid contains a base sequence represented by ~~SEQ-ID: No 52~~ SEQ ID NO: 52.

14. (Currently Amended) The DNA vaccine as set forth in claim 13, wherein the ~~[[1st]]~~ first plasmid is pGX10 gDsΔST (Accession No: KCCM 10415), the ~~[[2nd]]~~ second plasmid is pGX10 NS34 (Accession No: KCCM 10417), and the ~~[[3rd]]~~ third plasmid is pGX10 NS5 (Accession No: KCCM 10416).

15. (Original) The DNA vaccine as set forth in claim 14, wherein the pGX10 hIL-12m is additionally contained.

16. (Currently Amended) A recombinant adenovirus vaccine comprising including an adenovirus containing
a first adenovirus containing a core gene, an E1 gene and an E2 gene of hepatitis C virus;
a second adenovirus containing an NS3 gene and an NS4 gene of hepatitis C virus; and
a third adenovirus containing an NS5 gene of hepatitis C virus,
wherein the size of the hepatitis C virus genes contained in the first, second and third
adenoviruses ranges from [[2-6]] 2 to 6 kb of total antigen gene of HCV.
17. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim 16,
wherein ~~the recombinant adenovirus vaccine includes an adenovirus containing~~ the size of the
hepatitis C virus genes contained in the first, second and third adenoviruses ranges from [[2-4]] 2
to 4 kb of total antigen gene of HCV.
18. (Cancelled)
19. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim ~~18~~ 16,
wherein the ~~[[1st]] first~~ first adenovirus contains the core gene in which 35–40 amino acids of N-
~~terminal region~~ are eliminated from the N-terminal region of the core gene.
20. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim ~~19~~ 16,
wherein the ~~[[1st]] first~~ first adenovirus contains the core gene in which 40 amino acids of N-terminal
~~region~~ are eliminated from the N-terminal region of the core gene.
21. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim ~~18~~ 16,
wherein the E2 gene of the ~~[[1st]] first~~ first adenovirus contains a transmembrane domain of an E2
protein.
22. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim ~~18~~ 16,
wherein the ~~[[1st]] first~~ first adenovirus contains a base sequence represented by SEQ ID NO: 50
~~SEQ. ID. No 50.~~

23. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim 22, wherein the ~~[[1st]]~~ first adenovirus is rAd gDsΔST (Accession No: KCCM 10418).

24. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim 18 ~~16~~, wherein the ~~[[2nd]]~~ second adenovirus contains a base sequence represented by SEQ ID NO: 54 ~~SEQ ID No 54~~.

25. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim 24, wherein the ~~[[2nd]]~~ second adenovirus is rAd gDs NS34 (Accession No: KCCM 10420).

26. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim 18 ~~16~~, wherein the ~~[[3rd]]~~ third adenovirus contains a base sequence represented by SEQ ID NO: 52 ~~SEQ ID No 52~~.

27. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim 26, wherein the ~~[[3rd]]~~ third adenovirus is rAd NS5 (Accession No: KCCM 10419).

28. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim 18 ~~16~~, wherein the ~~[[1st]]~~ first adenovirus contains a base sequence represented by ~~SEQ ID No 50~~ SEQ ID NO: 50 the ~~[[2nd]]~~ second adenovirus contains a base sequence represented by ~~SEQ ID No 54~~ SEQ ID NO: 54, and the ~~[[3rd]]~~ third adenovirus contains a base sequence represented by ~~SEQ ID No 52~~ SEQ ID NO: 52.

29. (Currently Amended) The recombinant adenovirus vaccine as set forth in claim 28, wherein the ~~[[1st]]~~ first adenovirus is rAd gDsΔST (Accession No: KCCM 10418), the ~~[[2nd]]~~ second adenovirus is rAd gDs NS34 (Accession No: KCCM 10420), and the ~~[[3rd]]~~ third adenovirus is rAd NS5 (Accession No: KCCM 10419).

30. (Currently Amended) A ~~vaccine-administrating~~ method characterized by of enhancing the protective immunity to ~~HCV~~ hepatitis C virus comprising:
priming with the DNA vaccine of claim 1; and

boosting with the ~~a~~ recombinant adenovirus vaccine of ~~claim 16~~ wherein the recombinant adenovirus vaccine comprising

a first adenovirus containing a core gene, an E1 gene and an E2 gene of hepatitis C virus;

a second adenovirus containing an NS3 gene and an NS4 gene of hepatitis C virus; and

a third adenovirus containing an NS5 gene of hepatitis C virus,

wherein the size of the hepatitis C virus genes contained in the first, second and third adenoviruses ranges from 2 to 6 kb.

31. (Currently Amended) The ~~vaccine-administrating~~ method as set forth in claim 30, wherein the priming frequency of the DNA vaccine is 4-5.

32. (Currently Amended) The ~~vaccine-administrating~~ method as set forth in claim 31, wherein the priming frequency of the DNA vaccine is 3.

33. (Currently Amended) A ~~vaccine-administrating~~ method as set forth in claim 30, wherein characterized by ~~enhancing the protective immunity to HCV by~~ boosting with the recombinant adenovirus vaccine of claim 28 is conducted once after priming with the DNA vaccine of claim 13 three times.

34. (Currently Amended) A method ~~to enhance~~ as set forth in claim 30, wherein the protective immunity to HCV by ~~increasing CD4+ Th1 immune response~~ is increased by boosting with the recombinant adenovirus vaccine of claim 16 after priming with the DNA vaccine of claim 1.

35. (Currently Amended) A method ~~to enhance~~ as set forth in claim 30, wherein the protective immunity to HCV by ~~increasing CD4+ Th1 immune response~~ is increased by boosting with the recombinant adenovirus vaccine of claim 28 once after priming with the DNA vaccine of claim 13 three times.

36. (Currently Amended) A method as set forth in claim 30, wherein for the prevention and the treatment of hepatitis C, which is characterized by boosting is conducted with the recombinant adenovirus vaccine of claim 16 after priming with the DNA vaccine of claim 1.

37. (Currently Amended) A method as set forth claim 30, wherein for the prevention and the treatment of hepatitis C, which is characterized by boosting is conducted with the recombinant adenovirus vaccine of claim 28 once after priming with the DNA vaccine of claim 13 three times.